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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,555	10/26/2001	Joseph D. Wong	10013525-1	1099

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EXAMINER

BONZO, BRYCE P

ART UNIT	PAPER NUMBER
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2114

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,555

Applicant(s)

WONG ET AL.

Examiner

Bryce P Bonzo

Art Unit

2114

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 13-26 and 32-40 is/are rejected.
- 7) ☒ Claim(s) 7-12, 20-25, 27-31 and 41-45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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NON-FINAL OFFICIAL ACTION

Status of the Claims

Claims 1-6, 13-19, 26, 32-40 are rejected under 35 USC §103.

5 Claims 13-25 are rejected under 35 USC §101.

Claims 7-12, 20-25, 27-31 and 41-45 are objected to while containing allowable matter.

Rejections under 35 USC §101

35 U.S.C. 101 reads as follows:

10 Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-25 are rejected under 35 U.S.C. 101 because the claimed invention is
15 directed to non-statutory subject matter. Applicant has claimed a computer program per se, which is impermissible as it does not fall into a statutory class of invention.

Applicant is advised to modify the claim 13 as follows:

20 A computer program for providing automated diagnostic services for a cluster computer system comprising a plurality of nodes, each of the plurality of nodes providing an application to a plurality of clients, the computer program, stored on a computer
25 readable storage medium and executing in a computer,
comprising:

Rejections under 35 USC §103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 13-19, 26 and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konno (United States Patent No. 5,835,703) in view of Gorczyca (United States Patent No. 5,822,531).

As per claim 1, Konno discloses:

A method for providing automated diagnostic services, the method comprising the steps of:

receiving information related to a plurality of drives associated with the a *node* in a *computer system*, the drives defining one or more logical volume groups (column 8, lines 14-27);

determining whether the drives conform to a predefined condition related to failover capability based on the information related to the drives (column 9, lines 54-63), such that the one or more logical volume groups transition in the event of a failover (column 3, lines 64-66); and

providing a warning if the drives do not conform to the predefined condition (column 11, lines 17-20).

Konno does not disclose:

A method for providing automated diagnostic services for a *cluster computer system comprising a plurality of nodes, each of the plurality of nodes providing an*
5 *application to a plurality of clients*, the method comprising the steps of:

receiving information related to a plurality of drives associated with the *plurality of nodes in the cluster computer system*, the drives defining one or more logical volume groups;

determining whether the drives conform to a predefined condition related to
10 failover capability based on the information related to the drives, such that the one or more logical volume groups transition in the event of a failover; and

providing a warning if the drives do not conform to the predefined condition.

Gorczyca discloses the use of mass storage arrays in a clustered, client driven
15 network application system (column 1, lines 39-52). Gorczyca further discloses the benefits of such a system, namely redundancy and rapid reconfiguration (column 1 and 2). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mass storage array system of Konno by implementing the system in a high availability clustered environment such as that of Gorczyca, thereby
20 improving the fault detecting and failover handling of the capabilities of the clustered environment.

As per claim 2, Konno discloses:

wherein the step of receiving information related to a plurality of drives and the step of providing a warning are via a communications network (column 8, lines 64-66 and column 10, lines 13-18 describe connections over networks in addition to
5 Gorczyca's environment's inherent requirements).

As per claim 3, Konno discloses:

wherein the step of receiving information related to a plurality of drives and the step of providing a warning are performed within the cluster computer system (column
10 10, lines 13-18).

As per claim 4, Konno discloses:

wherein the step of determining whether the drives conform to a predefined condition comprises determining whether the drives are unique (column 10, line 16
15 discloses ID's which are unique).

As per claim 5, Konno discloses:

wherein the step of determining whether the drives conform to a predefined condition comprises determining whether a plurality of drive paths are valid (column 8,
20 lines 14-17: these tests factor in the transmission paths).

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As per claim 6, Konno discloses:

wherein the step of determining whether the drives conform to a predefined condition comprises determining whether the one or more logical volume groups conform to a predetermined logical volume management condition (column 10, lines 13-18).

Claims 13, 14 and 17-19 are the computer product implementation of the method of claims 1-6 respectively and are rejected on the same grounds.

As per claim 15, Konno discloses:

wherein the first, second, and third portions of logic are embodied in cluster middleware controlling the cluster computer system (the use of the drive controllers qualifies for the middleware, as it is software the middle of the process chain).

As per claim 16, Konno discloses:

wherein the first, second, and third portions of logic are embodied in an operating system associated with each of the plurality of nodes (the logic is located on a dedicated RAID storage server, and this is considered sufficient for the operating system as the driver which controller the RAID are embedded in the OS).

Claim 26 is the means plus function embodiment of the method claim 1, and are rejected on the same grounds recited above.

Claims 32, 39 and 40 are rejected as being the system embodiment of the method of claims 1, 5 and 6 and are rejected accordingly.

5 As per claim 33, Konno discloses:

wherein the computers is a server (Host 1 is the only interface to the data storage, and Gorczyca discloses modifying the single host into a middle layer, the host or layer is clearly servicing the requests of the clients of Gorczyca).

10 Claims 34 and 35 are the system embodiments of the software program of claims 16 and 15 respectively, and are rejected on the same grounds.

As per claim 36, Gorczyca discloses:

15 wherein the computer further comprises a network interface card configured to communicate with a cluster interface(column 3, lines 20-24).

As per claim 37, Gorczyca discloses:

further comprising one or more clients in communication with the one or more computers via the cluster interface (column 3, lines 9-42).

As per claim 38, Gorczyca discloses:

wherein the computer further comprises a network interface configured to communicate with the cluster computer system via a communications network and (column 3, lines 9-42) wherein the information related to a plurality of drives is received
5 via the communications network and the warning is provided to the cluster computer system via the communications network (column 4, lines 6-26).

Allowable Matter

Claims 7-12, 20-25, 27-31 and 41-45 are objected to as being dependent upon a
10 rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The italicized portions of the claims below taken with the claim as a whole overcome the prior art. Claims 7 and are used to illustrate the subject matter.

15 As per claims 7, 20 and 41:

wherein the step of *determining whether the one or more logical volume groups conform to a predetermined logical volume management condition comprises determining whether the logical volume numbers within the one or more logical volume groups are numbered sequentially*

20 As per claims 8-12, 21-25, 27-31 and 42-45:

determining which of the plurality of drives are shared drives;

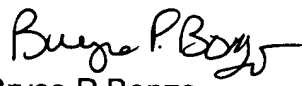
initiating a read/write test on the shared drives.

Conclusion

Any inquiry concerning this communication or earlier communications from the
5 examiner should be directed to Bryce P Bonzo whose telephone number is (703) 305-
4834 or upon moving to the new facilities in Alexandria (571) 272-3655. The examiner
can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Robert Beausoliel can be reached on (703) 305-9713 or upon moving to the
10 new facilities in Alexandria (571) 272-3645. The fax phone number for the organization
where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
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published applications may be obtained from either Private PAIR or Public PAIR.
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Business Center (EBC) at 866-217-9197 (toll-free).


Bryce P Bonzo
Examiner
Art Unit 2114